

REMARKS

Summary of the Office Action

The drawing figures 33 and 34 are objected to because they should be labeled as “Prior Art.”

Claim 20 is objected to for minor informalities.

Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Honma et al., (JP 53-116089).

Claims 11 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wakai et al. (US 5,166,085) in view of Homna et al.

Summary of the Response to the Office Action

Applicants have amended claim 20 in accordance with the Examiner’s suggestion, amended claims 1 and 11 to better define the invention, added new dependent claims 21, and amended the drawing figures. Accordingly, claims 1, 11, 20, and 21 are pending for consideration.

Objection to the Drawings

The drawings have been objected to for not designating FIGs. 33 and 34 as “Prior Art.” Applicants submit herewith a Request for Approval of Drawing Changes to include the designation “Prior Art.” As indicated in red ink, FIGs. 33 and 34 have been designated as “Prior Art.” Accordingly, Applicants respectfully request that the objection to the drawings be withdrawn and that submission of formal drawings until the proposed changes have been approved.

Objection to the Claims

Claim 20 has been objected to for a minor informality. Applicants have amended claim 20 specification to correct its dependency upon claim 11. Accordingly, Applicants respectfully request that the objection to claim 20 be withdrawn.

All Claims Define Allowable Subject Matter

Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Honma et al., (JP 53-116089). The rejection is traversed as being based upon a reference that neither teaches nor suggests the novel combination of features now recited in independent claim 1, as amended.

Independent claim 1, as amended, recites “a wiring comprising a Cu (copper) layer surrounded along at least one side by a first coating film made of titanium and surrounded along at least three sides by a second coating film made of titanium oxide.” In contrast to the Applicants’ claimed invention, Honma et al. apparently teaches a copper wiring material coated with an alloy of titanium.

Accordingly, Applicants respectfully submit that Honma et al. neither teaches nor suggests Applicants’ claimed feature of a wiring comprising a Cu (copper) layer surrounded along at least one side by a first coating film made of titanium and surrounded along at least three sides by a second coating film made of titanium oxide.

New claim 21 is also allowable for the same reasons as discussed above with regard to independent claim 1.

For at least the above reasons, Applicants respectfully assert that the rejection under 35 U.S.C. § 102(b) should be withdrawn because the disclosure of Homna et al. neither teaches nor suggests the novel combination of features recited in independent claim 1, as amended.

Claims 11 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wakai et al. (US 5,166,085) in view of Homna et al. Applicants respectfully traverse the rejection for at least the same reasons provided above.

Dependent claims 11 and 20 are patentable over the prior art of record for at least the same reasons as discussed above with regard to independent claim 1, and furthermore for the additional features that they each recite. In particular, dependent claim 11 recites a thin film transistor substrate having a wiring structure as recited in independent claim 1, and dependent claim 20 recites a liquid crystal display having the thin film transistor substrate recited by dependent claim 11. The Office Action contends that the only difference between dependent claims 11 and 20, and hence independent claim 1, as amended, is that a copper wiring layer may be surrounded with titanium material. The Office Action alleges that Honma et al. teaches surrounding a copper wiring layer with titanium material to improve the adhesion around the copper layer. The Office Action further contends that it would have been obvious to surround the copper wiring layer of Wakai et al. with titanium material, per the teachings of Homna et al. Applicants respectfully traverse this rejection as being based upon a combination of references that neither teaches nor suggests the novel combination of features recited in amended independent claim 1, and hence dependent claims 11 and 20, and furthermore for the additional features that dependent claims 11 and 20 recite.

With regard to dependent claim 11, and hence independent claim 1, Applicants' invention calls for a thin film transistor substrate having a wiring comprising a Cu (copper) layer surrounded along at least one side by a first coating film made of titanium and surrounded along at least three sides by a second coating film made of titanium oxide. In contrast to the Applicants' claimed invention, the copper wiring layer taught by Homna et al. is surrounded by a single titanium layer. Accordingly, Applicants respectfully submit that Homna et al. neither teaches nor suggests the Applicants' claimed novel combination of features including at least a wiring comprising a Cu (copper) layer surrounded along at least one side by a first coating film made of titanium and surrounded along at least three sides by a second coating film made of titanium oxide. Furthermore, Applicants respectfully submit that neither Wakai et al. nor Homna et al., whether along or in combination, teach or suggest the Applicants' claimed novel combination of features including at least a wiring comprising a Cu (copper) layer surrounded along at least one side by a first coating film made of titanium and surrounded along at least three sides by a second coating film made of titanium oxide.

With regard to dependent claim 20, and hence independent claim 1 and dependent claim 11, Applicants' invention calls for a liquid crystal display including a thin film transistor substrate having a wiring comprising a Cu (copper) layer surrounded along at least one side by a first coating film made of titanium and surrounded along at least three sides by a second coating film made of titanium oxide. In contrast to the Applicants' claimed invention, the copper wiring layer taught by Homna et al. is surrounded by a single titanium layer. Accordingly, Applicants respectfully submit that Homna et al. neither teaches nor suggests the Applicants' claimed novel

combination of features including at least a liquid crystal display including a thin film transistor substrate having a wiring comprising a Cu (copper) layer surrounded along at least one side by a first coating film made of titanium and surrounded along at least three sides by a second coating film made of titanium oxide. Furthermore, Applicants respectfully submit that neither Wakai et al. nor Homna et al., whether alone or in combination, teach or suggest the Applicants' claimed novel combination of features.

For at least the above reasons, Applicants respectfully assert that the rejection under 35 U.S.C. § 103(a) should be withdrawn because Wakai et al. and Homna et al., whether taken alone or in combination, teach or suggest the novel combination of features recited in dependent claims 11 and 20, and furthermore the novel combination of features of independent claim 1, as amended.

CONCLUSION

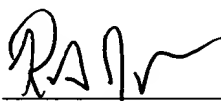
In view of the foregoing, Applicants respectfully request reconsideration and reexamination of the application and timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of the response, the Examiner is invited to contact the undersigned to expedite prosecution.

Attached hereto is a marked-up version of the changes made to the claims by the current attachment. The attachment is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE.**"

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such as an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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Date: August 26, 2002

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claim 1 has been amended as follows:

1.(Amended) A wiring comprising a Cu (copper) layer surrounded **along at least one side** by a **first** coating film made of titanium [ø] **and surrounded along at least three sides by a second coating film made of** titanium oxide.

Claim 11 has been amended as follows:

11. (Amended) A TFT (thin film transistor) substrate having a wiring as claimed in [~~any one of claims 1 to 4~~] **claim 1**.

Claim 20 has been amended as follows:

20.(Amended) An LCD (liquid crystal display) comprising a pair of opposing substrates and a liquid crystal disposed between the opposing substrates, wherein **at least** one of the pair of opposing substrates is a TFT substrate as claimed in [~~any one of claims 11, 12, and 13~~] **claim 11**.